

---

---

SUPPLEMENTS  
to  
CIRCULATION

*An Official Journal of the American Heart Association*

---

---

VOLUMES 53 AND 54

January-December, 1976

**Author and Subject Indexes to Supplements I and II are included in those issues.**



AMERICAN HEART ASSOCIATION, INC.

---

---

---

# SUPPLEMENTS to CIRCULATION

AN OFFICIAL JOURNAL OF THE AMERICAN HEART ASSOCIATION  
7320 Greenville Ave., Dallas, Texas 75231

---

EDITOR OF SUPPLEMENTS  
Neal S. Bricker, M.D.

---

*Supplements to CIRCULATION will be published occasionally for binding annually in a separate volume entitled Supplements to CIRCULATION. Each supplement's page numbers will begin with page one. Supplements to CIRCULATION will be indexed separately at the end of the year.*

---

PUBLICATIONS COMMITTEE, AMERICAN HEART ASSOCIATION  
Stanford Wessler, *Chairman*  
New York, N. Y.

Neal Bricker  
Miami, Fla.

Arthur Guyton  
Jackson, Miss.

Donald Harrison  
Stanford, Calif.

Brian Hoffman  
New York, N.Y.

Thomas N. James  
Birmingham, Ala.

Thomas Killip  
New York, N.Y.

Herbert J. Levine  
Boston, Mass.

Clark H. Millikan  
Rochester, Minn.

Lucille E. Notter  
New York, N.Y.

Milton C. Paige, Jr.  
Boston, Mass.

Richard L. Popp  
Stanford, Calif.

Abraham Rudolph  
San Francisco, Calif.

Eugene A. Stead, Jr.  
Durham, N.C.

Arthur Waltz  
San Francisco, Calif.

Paul Yu  
Rochester, N.Y.

---

Published at the Publication Office, 7320 Greenville Ave., Dallas, Texas 75231. Second class postage paid at Dallas, Texas, and additional mailing offices.

---

Copyright © 1976. The American Heart Association, Inc., 7320 Greenville Ave., Dallas, Texas 75231

# SUPPLEMENTS

## to

# CIRCULATION

VOLUMES 53 AND 54

January-December, 1976

### PROTECTION OF THE ISCHEMIC MYOCARDIUM

No. 1 (March)

#### INTRODUCTORY REMARKS

Eugene Braunwald .....	I-1
<b>I. THE CELLULAR BASIS OF ISCHEMIA AND INFARCTION</b> .....	I-3
Chairman: Howard E. Morgan	
<b>Contribution of Tissue Acidosis to Ischemic Injury in the Perfused Rat Heart</b>	
John R. Williamson, Stephen W. Schaffer, Christopher Ford, Brian Safer .....	I-3
<b>Brief Communication: Possible Effects of Hydrogen Ions in Ischemic Myocardium</b>	
Richard W. Tsien .....	I-14
<b>Studies on the Subcellular Pathophysiology of Ischemia</b>	
Benjamin F. Trump, Wolfgang J. Mergner, Myong Won Kahng, Andrew J. Saladino .....	I-17
<b>Discussion: Relationship of Acute Ischemia to Functional Defects and Irreversibility</b>	
Robert B. Jennings .....	I-26
<b>Brief Communication: Effect of Cardiac Ischemia on Protein Degradation</b>	
D. Eugene Rannels, R. Race Kao, Howard E. Morgan .....	I-30
<b>General Discussion</b> .....	I-31
<b>Lysosomes in Myocardial Infarction: Studies by Means of Cytochemistry and Subcellular Fractionation, with Observations on the Effect of Methylprednisolone</b>	
Sylvia Hoffstein, Gerald Weissmann, Arthur C. Fox .....	I-34
<b>Discussion: How do Cardiac Cells Die?</b>	
Harry A. Fozzard .....	I-40
<b>General Discussion</b> .....	I-41
<b>Session Chairman's Closing Remarks: The Cellular Basis of Ischemia and Infarction</b>	
Howard E. Morgan .....	I-43
<b>II. CONSEQUENCES OF MYOCARDIAL ISCHEMIA</b> .....	I-45
Chairman: H. J. C. Swan	
<b>Effects of Hyperosmotic Mannitol in Reducing Ischemic Cell Swelling and Minimizing Myocardial Necrosis</b>	
W. John Powell, Jr., Donald R. DiBona, Jorge Flores, Norberto Frega, Alexander Leaf .....	I-45

(Continued)

S-III

<b>Discussion</b>	
James T. Willerson .....	I-49
<b>Discussion</b>	
Benjamin F. Trump .....	I-52
<b>General Discussion</b> .....	I-54
<b>Influence of Collateral Flow on the Ischemic Tolerance of the Heart Following Acute and Subacute Coronary Occlusion</b>	
Wolfgang Schaper, Stanislaw Pasyk .....	I-57
<b>Discussion</b>	
Colin M. Bloor .....	I-63
<b>General Discussion</b> .....	I-65
<b>Platelet Aggregation Secondary to Coronary Obstruction</b>	
Sean Moore .....	I-66
<b>Discussion</b>	
John C. Hoak .....	I-69
<b>General Discussion</b> .....	I-70
<b>Session Chairman's Closing Remarks: Consequences of Myocardial Ischemia</b>	
H. J. C. Swan .....	I-71
<b>III. THE CHARACTERIZATION OF MYOCARDIAL ISCHEMIC INJURY AND INFARCTION</b> .....	I-73
Chairman: Burton E. Sobel	
<b>Electrocardiographic ST-Segment Analysis in the Characterization of Myocardial Ischemia and Infarction</b>	
John Ross, Jr. ....	I-73
<b>Brief Communication: First Electrocardiographic Sign of Myocardial Ischemia: An Electrophysiological Conjecture</b>	
Edward A. Johnson .....	I-82
<b>Brief Communication: Clinical Uses of Precordial ST-Segment Mapping and the Pathophysiology of ST-Segment Voltage Changes</b>	
John T. Flaherty .....	I-85
<b>Analysis of Regional Myocardial Function, Dimensions, and Wall Thickness in the Characterization of Myocardial Ischemia and Infarction</b>	
John Ross, Jr., Dean Franklin .....	I-88
<b>Brief Communication: ST-Segment Mapping in Ischemia and Infarction</b>	
William B. Hood, Jr. ....	I-93
<b>General Discussion</b> .....	I-95
<b>Biochemical Markers of Ischemic Injury</b>	
William E. Shell, Burton E. Sobel .....	I-98
<b>Brief Communication: Assessment of Myocardial Injury with Creatine Phosphokinase (CPK)</b>	
John K. Kjekshus .....	I-106
<b>Serial CPK Determinations for Evaluation of Size and Development of Acute Myocardial Infarction</b>	
Walter H. Bleifeld, P. Hanrath, D. Mathey .....	I-108
<b>General Discussion</b> .....	I-111
<b>Radionuclide Methods in the Evaluation of Myocardial Ischemia and Infarction</b>	
B. Leonard Holman .....	I-112
<b>Discussion: Limitations of Present Radionuclide Methods in the Evaluation of Myocardial Ischemia and Infarction</b>	
Michel M. Ter-Pogossian .....	I-119
<b>Discussion</b>	
Bertram Pitt, H. William Strauss .....	I-121
<b>Brief Communication: Radionuclide Techniques in the Assessment of Myocardial Ischemia and Infarction</b>	
George A. Beller, Thomas W. Smith .....	I-123
<b>Brief Communication: Radionuclide Imaging of Myocardial Ischemia and Infarction</b>	
Barry L. Zaret .....	I-126
<b>Discussion</b>	
James T. Willerson .....	I-128

(Continued)

<b>Session Chairman's Closing Remarks: The Characterization of Myocardial Ischemic Injury and Infarction</b>	
Burton E. Sobel .....	I-129
<b>IV. NATURAL HISTORY OF MYOCARDIAL ISCHEMIC DAMAGE</b>	
Chairman: Michael F. Oliver .....	I-132
<b>Natural History of Myocardial Infarction and Its Prodromal Syndromes</b>	
Bertram Pitt .....	I-132
<b>Discussion</b>	
John O. Parker .....	I-135
<b>Discussion</b>	
Robert Rosati .....	I-138
<b>General Discussion</b> .....	I-139
<b>The Relationship of Myocardial Infarct Size and Prognosis</b>	
James B. Caulfield, Robert Leinbach, Herman Gold .....	I-141
<b>Discussion</b>	
Benjamin F. Trump .....	I-145
<b>Brief Communication: Infarct Size, Prognosis, and Causal Contiguity</b>	
Burton E. Sobel .....	I-146
<b>General Discussion</b> .....	I-148
<b>Relations Between Enzymatically Estimated Myocardial Infarct Size and Early Ventricular Dysrhythmia</b>	
Jerome R. Cox, Jr., Robert Roberts, H. Dieter Ambos, G. Charles Oliver, Burton E. Sobel .....	I-150
<b>Discussion: Significance of Ventricular Arrhythmias During Myocardial Ischemia</b>	
Michael F. Oliver .....	I-155
<b>Discussion: Have We Solved the Arrhythmia Problem?</b>	
Harry A. Fozzard .....	I-158
<b>General Discussion</b> .....	I-160
<b>Session Chairman's Closing Remarks: Natural History of Myocardial Ischemic Damage</b>	
Michael F. Oliver .....	I-161
<b>V. ASSESSMENT OF INTERVENTIONS DESIGNED TO REDUCE MYOCARDIAL ISCHEMIC DAMAGE</b>	
Chairman: Eugene Braunwald .....	I-162
<b>Effects of Metabolic and Pharmacologic Interventions on Myocardial Infarct Size Following Coronary Occlusion</b>	
Peter R. Maroko, Eugene Braunwald .....	I-162
<b>Brief Communication: The Influence of Myocardial Metabolism on Ischemic Damage</b>	
Michael F. Oliver .....	I-168
<b>Brief Communication: Corticosteroids and Membrane Stabilization</b>	
Gerald Weissmann .....	I-171
<b>Brief Communication: Observations on Myocardial Oxygen Consumption in the Hypoxic and Ischemic Canine Heart</b>	
W. John Powell, Jr., Eric R. Powers, Gus J. Vlahakes .....	I-173
<b>Mechanical and Surgical Interventions for the Reduction of Myocardial Ischemia</b>	
Eldred D. Mundth .....	I-176
<b>Discussion</b>	
James T. Willerson .....	I-183
<b>Discussion</b>	
C. Richard Conti .....	I-185
<b>General Discussion</b> .....	I-187
<b>Protection of Ischemic Myocardium by Nitroglycerin: Experimental and Clinical Results</b>	
Stephen E. Epstein, Jeffrey S. Borer, Kenneth M. Kent, David R. Redwood, Robert E. Goldstein, Barrie Levitt .....	I-191
<b>General Discussion</b> .....	I-198
<b>Brief Communication: Reduction of Precordial ST-Segment Elevation in Patients with Anterior Myocardial Infarction by Oxygen Breathing</b>	
John E. Madias, William B. Hood, Jr. ....	I-198
<b>General Discussion</b> .....	I-200

(Continued)

<b>Brief Communication: Modification of Myocardial Injury in Man by Corticosteroid Administration</b>	
John Morrison, Lawrence Reduto, Roy Pizzarello, Kenneth Geller, Thomas Maley, Stephen Gulotta .....	I-200
<b>General Discussion</b> .....	I-203
<b>Brief Communication: Deleterious Effects of Methylprednisolone in Patients with Myocardial Infarction</b>	
Robert Roberts, Vincent DeMello, Burton E. Sobel .....	I-204
<b>General Discussion</b> .....	I-206
<b>Brief Communication: Glucose-Insulin-Potassium, Free Fatty Acids and Acute Myocardial Infarction in Man</b>	
Richard O. Russell, Jr., William J. Rogers, John A. Mantle, Huey G. McDaniel, Charles E. Rackley .....	I-207
<b>General Discussion</b> .....	I-209
<b>Brief Communication: Effect of Reducing Circulating Free Fatty Acids on Ventricular Arrhythmias during Myocardial Infarction and on ST-Segment Depression during Exercise-Induced Ischemia</b>	
Michael F. Oliver, M. J. Rowe, M. R. Luxton, N. E. Miller, J. M. Neilson .....	I-210
<b>General Discussion</b> .....	I-213
<b>ASSESSMENT OF FUTURE DIRECTIONS BY SESSION CHAIRMEN</b>	
Howard E. Morgan .....	I-213
H. J. C. Swan .....	I-214
Burton E. Sobel .....	I-215
Eugene Braunwald .....	I-216
<b>AUTHOR INDEX</b> .....	I-219
<b>SUBJECT INDEX</b> .....	I-221

## ABSTRACTS FOR THE 49TH SCIENTIFIC SESSIONS

Scientific Sessions for Nurses,

30th Annual Meeting,

Council on Arteriosclerosis — American Society for the Study of Arteriosclerosis

No. 2 (October)

## CARDIOVASCULAR SURGERY 1975

No. 3 (December)

<b>Comparison of Internal Mammary Artery and Saphenous Vein Bypass Grafts for Myocardial Revascularization: Exercise Test and Angiographic Correlations</b>	
Wayne Siegel and Floyd D. Loop .....	III-1
<b>Hemodynamic Effects of Nitroprusside Infusion During Coronary Artery Operation in Man</b>	
Demetrios G. Lappas, Edward Lowenstein, John Waller, Nabil R. Fahmy, and Willard M. Daggett .....	III-4
<b>Improved Myocardial Performance After Aortic Cross Clamping By Combining Pharmacologic Arrest with Total Hypothermia</b>	
Roy L. Nelson, S. Myron Goldstein, Douglas H. McConnell, James V. Maloney, Jr., and Gerald D. Buckberg .....	III-11
<b>Pulmonary Artery Banding for Truncus Arteriosus in the First Year of Life</b>	
Arun K. Singh, Marc R. De Leval, John R. Pincott, and Jaroslav Stark .....	III-17
<b>Determination of Improved Myocardial Perfusion After Aortocoronary Bypass Surgery by Exercise Rubidium-81 Scintigraphy</b>	
Arthur J. Lurie, Antone F. Salel, Daniel S. Berman, Gerald L. DeNardo, Edward J. Hurley, and Dean T. Mason .....	III-20

(Continued)

<b>Perioperative Myocardial Infarction Diagnosed by Technetium 99m Stannous Pyrophosphate Myocardial Scintigrams</b>	
Melvin R. Platt, Lawrence J. Mills, Robert W. Parkey, James T. Willerson, Frederick J. Bonte, William Shapiro, and Winfred L. Sugg .....	III-24
<b>Current Status of Porcine Heterograft Prostheses: A 5-Year Appraisal</b>	
Hamner Hannah III and Robert L. Reis .....	III-27
<b>Long-term Follow-up of Patients with Coronary Artery Bypass Grafts</b>	
Quentin R. Stiles, George G. Lindesmith, Bernard L. Tucker, Richard K. Hughes, and Bert W. Meyer .....	III-32
<b>Pulmonary Atresia: Surgical Considerations and Results in 103 Patients Undergoing Definitive Repair</b>	
Christian L. Olin, Donald G. Ritter, Dwight C. McGoon, Robert B. Wallace, and Gordon K. Danielson .....	III-35
<b>Refractory Angina Pectoris: Follow-up After Intraaortic Balloon Pumping and Surgery</b>	
Herman K. Gold, Robert C. Leinbach, Mortimer J. Buckley, Eldred D. Mundth, Willard M. Daggett, and W. Gerald Austen .....	III-41
<b>Mitral Valve Replacement: A 10-Year Follow-up of Non-Cloth-Covered vs. Cloth-Covered Caged-Ball Prostheses</b>	
Albert Starr, Gary Grunkemeier, Louis Lambert, J. Edward Okies, and David Thomas .....	III-47
<b>Does Cardiac Transplantation Prolong Life and Improve Its Quality? An Updated Report</b>	
Sharon A. Hunt, Alan K. Rider, Edward B. Stinson, Randall B. Griep, John S. Schroeder, Donald C. Harrison, and Norman E. Shumway .....	III-56
<b>Actuarial Comparison of Hancock Porcine and Prosthetic Disc Valves for Isolated Mitral Valve Replacement</b>	
Lawrence H. Cohn, John H. Sanders, and John J. Collins Jr. ....	III-60
<b>Use of a Valved Conduit from Right Atrium to Pulmonary Artery for "Correction" of Single Ventricle</b>	
Magdi H. Yacoub and Rosemary Radley-Smith .....	III-63
<b>Patency of Internal Mammary-Coronary Grafts</b>	
Hendrick B. Barner, J. Gerard Mudd, Alexander L. Mark, Naseer Ahmad, and Judith F. Dickens .....	III-70
<b>Continuous Detection of Microemboli During Cardiopulmonary Bypass in Animals and Man</b>	
Richard E. Clark, Dennis R. Dietz, and James G. Miller .....	III-74
<b>Relationship Between Right Ventricular Muscle Bundles and Pulmonary Valve: Significance in Pulmonary Atresia With Intact Ventricular Septum</b>	
Kit V. Arom and Jesse E. Edwards .....	III-79
<b>Homograft and Prosthetic Aortic Valve Replacement: A Comparative Study</b>	
Michael Pine, Gary Hahn, Bruce Paton, George Pappas, D. Hywel Davies, Peter Steele, Ray Pryor, and S. Gilbert Blount, Jr. ....	III-84
<b>Balloon Counterpulsation Following Surgery for Ischemic Heart Disease</b>	
Patrick J. Scanlon, John O'Connell, Sarah A. Johnson, John M. Moran, Rolf Gunnar, and Roque Pifarre .....	III-90
<b>Myocardial Revascularization and Mitral Repair or Replacement for Mitral Insufficiency Due to Coronary Artery Disease</b>	
Jerome Harold Kay, Pablo Zubiate, A. Michael Mendez, and Edward F. Dunne .....	III-94
<b>Operative Management of Tricuspid Regurgitation</b>	
George E. Reed, Arthur D. Boyd, Frank C. Spencer, Richard M. Engelman, O. Wayne Isom, and Joseph N. Cunningham .....	III-96
<b>Hemodynamic Evaluation of Fontan Operation in Tricuspid Atresia</b>	
Maria Serratto, Robert A. Miller, Constantine Tatoes, and Rostam Ardekani .....	III-99
<b>Postcardiotomy Low Cardiac Output Clinical Experience with a Left Heart Assist Device</b>	
Robert L. Litwak, Salvador B. Lukban, Roy A. Jurado, Robert M. Koffsky, Arcadio F. Ortiz, Jr., Adam P. Fischer, and James J. Sherman .....	III-102
<b>The VA Cooperative Randomized Study of Surgery for Coronary Arterial Occlusive Disease: II. Subgroup with Significant Left Main Lesions</b>	
Timothy Takaro, Herbert N. Hultgren, Martin J. Lipton, and Katherine M. Detre, and Participants in the Study Group .....	III-107
<b>Surgical Treatment of Aneurysms of the Ascending Aorta</b>	
Joe N. Kidd, George J. Reul, Jr., Denton A. Cooley, Frank M. Sandiford, E. Ross Kyger, III, and Don C. Wukasz .....	III-118

1979. *Journal of Documentation*, 34, 1, 1-10.
1980. *Journal of Documentation*, 35, 1, 1-10.
1981. *Journal of Documentation*, 36, 1, 1-10.
1982. *Journal of Documentation*, 37, 1, 1-10.
1983. *Journal of Documentation*, 38, 1, 1-10.
1984. *Journal of Documentation*, 39, 1, 1-10.
1985. *Journal of Documentation*, 40, 1, 1-10.
1986. *Journal of Documentation*, 41, 1, 1-10.
1987. *Journal of Documentation*, 42, 1, 1-10.
1988. *Journal of Documentation*, 43, 1, 1-10.
1989. *Journal of Documentation*, 44, 1, 1-10.
1990. *Journal of Documentation*, 45, 1, 1-10.
1991. *Journal of Documentation*, 46, 1, 1-10.
1992. *Journal of Documentation*, 47, 1, 1-10.
1993. *Journal of Documentation*, 48, 1, 1-10.
1994. *Journal of Documentation*, 49, 1, 1-10.
1995. *Journal of Documentation*, 50, 1, 1-10.
1996. *Journal of Documentation*, 51, 1, 1-10.
1997. *Journal of Documentation*, 52, 1, 1-10.
1998. *Journal of Documentation*, 53, 1, 1-10.
1999. *Journal of Documentation*, 54, 1, 1-10.
2000. *Journal of Documentation*, 55, 1, 1-10.
2001. *Journal of Documentation*, 56, 1, 1-10.
2002. *Journal of Documentation*, 57, 1, 1-10.
2003. *Journal of Documentation*, 58, 1, 1-10.
2004. *Journal of Documentation*, 59, 1, 1-10.
2005. *Journal of Documentation*, 60, 1, 1-10.
2006. *Journal of Documentation*, 61, 1, 1-10.
2007. *Journal of Documentation*, 62, 1, 1-10.
2008. *Journal of Documentation*, 63, 1, 1-10.
2009. *Journal of Documentation*, 64, 1, 1-10.
2010. *Journal of Documentation*, 65, 1, 1-10.
2011. *Journal of Documentation*, 66, 1, 1-10.
2012. *Journal of Documentation*, 67, 1, 1-10.
2013. *Journal of Documentation*, 68, 1, 1-10.
2014. *Journal of Documentation*, 69, 1, 1-10.
2015. *Journal of Documentation*, 70, 1, 1-10.
2016. *Journal of Documentation*, 71, 1, 1-10.
2017. *Journal of Documentation*, 72, 1, 1-10.
2018. *Journal of Documentation*, 73, 1, 1-10.
2019. *Journal of Documentation*, 74, 1, 1-10.
2020. *Journal of Documentation*, 75, 1, 1-10.

# SUPPLEMENTS TO CIRCULATION

VOLUMES 53 and 54

JANUARY-DECEMBER, 1976

*Author Indexes to Protection of the Ischemic Myocardium, Supplement I, March 1976 and ABSTRACTS, AHA 49th Scientific Sessions, Supplement II, October 1976, are included in those issues.*

## AUTHOR INDEX

### CARDIOVASCULAR SURGERY — NO. 3

**A**  
Ahmad N, III-70  
Ardekani R, III-99  
Arom KV, III-79  
Austen WG, III-41

**B**  
Barner HB, III-70  
Berman DS, III-20  
Blount SG Jr, III-84  
Bonte FJ, III-24  
Boyd AD, III-96  
Buckberg GD, III-11  
Buckley MJ, III-41

**C**  
Clark RE, III-74  
Cohn LH, III-60  
Collins JJ Jr, III-60  
Cooley DA, III-118  
Cunningham JN, III-96

**D**  
Daggett WM, III-4, III-41  
Danielson GK, III-35  
Davies DH, III-84  
De Leval MR, III-17  
DeNardo GL, III-20  
Detre KM, III-107  
Dickens JF, III-70  
Dietz DR, III-74  
Dunne EF, III-94

**E**  
Edwards JE, III-79  
Engelman RM, III-96

**F**  
Fahmy NR, III-4  
Fischer AP, III-102

**G**  
Gold HK, III-41  
Goldstein SM, III-11  
Griep RB, III-56  
Grunkemeier G, III-47  
Gunnar R, III-90

**H**  
Hahn G, III-84  
Hannah H 3rd, III-27  
Harrison DC, III-56  
Hughes RK, III-32

Hultgren HN, III-107  
Hunt SA, III-56  
Hurley EJ, III-20

**I**  
Isom OW, III-96

**J**  
Johnson SA, III-90  
Jurado RA, III-102

**K**  
Kay JH, III-94  
Kidd JN, III-118  
Koffsky RM, III-102  
Kyger ER 3rd, III-118

**L**  
Lambert L, III-47  
Lappas DG, III-4  
Leinbach RC, III-41  
Lindesmith GG, III-32  
Lipton MJ, III-107  
Litwak RL, III-102  
Loop FD, III-1  
Lowenstein E, III-4  
Lukban SB, III-102  
Lurie AJ, III-20

**M**  
Maloney JV Jr, III-11  
Mark AL, III-70  
Mason DT, III-20  
McConnell DH, III-11  
McGoan DC, III-35  
Mendez AM, III-94  
Meyer BW, III-32  
Miller JG, III-74  
Miller RA, III-99  
Mills LJ, III-24  
Moran JM, III-90  
Mudd JG, III-70  
Mundth ED, III-41

**N**  
Nelson RL, III-11

**O**  
O'Connell J, III-90  
Okies JE, III-47  
Olin CL, III-35  
Ortiz AF Jr, III-102

**P**  
Pappas G, III-84  
Parkey RW, III-24  
Paton B, III-84  
Pifarre R, III-90  
Pincott JR, III-17  
Pine M, III-84  
Platt MR, III-24  
Pryor R, III-84

**R**  
Radley-Smith R, III-63  
Reed GE, III-96  
Reis RL, III-27  
Reul GJ Jr, III-118  
Rider AK, III-56  
Ritter DG, III-35

**S**  
Salel AF, III-20  
Sanders JH, III-60  
Sandiford FM, III-118  
Scanlon PJ, III-90  
Schroeder JS, III-56  
Serratto M, III-99  
Shapiro W, III-24  
Sherman JJ, III-102  
Shumway NE, III-56  
Siegel W, III-1  
Singh AK, III-17  
Spencer FC, III-96  
Stark J, III-17  
Starr A, III-47  
Steele P, III-84  
Stiles QR, III-32  
Stinson EB, III-56  
Sugg WL, III-24

**T**  
Takaro T, III-107  
Tatooles C, III-99  
Thomas D, III-47  
Tucker BL, III-32

**W**  
Wallace RB, III-35  
Waller J, III-4  
Willerson JT, III-24  
Wukasch DC, III-118

**Y**  
Yacoub MH, III-63

**Z**  
Zubiate P, III-94

# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

PUBLISHED WEEKLY

CHICAGO, ILL., U.S.A.

Subscription price, Five Dollars Per Annum in Advance. Single Copies, Fifteen Cents.

Entered as Second-Class Matter, May 2, 1879.

Postage paid at Chicago, Ill., and at additional mailing offices.

Acceptance for mailing at special rate of postage provided for in Act of October 3, 1917.

Postmaster: Send address changes in advance.

Copyright, 1948, by American Medical Association

Published by the American Medical Association

535 North Dearborn Street, Chicago 10, Ill.

Telephone: ME 5-2121

Teletype: 535 N. Dearborn

Cable: AMEDASSO CHICAGO

Second-class postage paid at Chicago, Ill.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

Postage paid at additional mailing offices.

# SUPPLEMENTS TO CIRCULATION

VOLUMES 53 AND 54

JANUARY-DECEMBER, 1976

*Subject Indexes to Protection of the Ischemic Myocardium, Supplement I, March 1976 and ABSTRACTS, AHA 49th Scientific Sessions, Supplement II, October 1976, are included in those issues.*

## SUPPLEMENT SUBJECT INDEX CARDIOVASCULAR SURGERY — NO. 3

- A**
- Aneurysms**  
Surgical treatment of aneurysms of the ascending aorta, III-118
- Angiography**  
Comparison of internal mammary artery and saphenous vein bypass grafts for myocardial revascularization: exercise test and angiographic correlations, III-1
- Angina pectoris**  
Refractory angina pectoris: follow-up after intraaortic balloon pumping and surgery, III-41
- Aorta**  
Homograft and prosthetic aortic valve replacement: a comparative study, III-84  
Improved myocardial performance after aortic cross clamping by combining pharmacologic arrest with total hypothermia, III-11  
Surgical treatment of aneurysms of the ascending aorta, III-118
- Arteries, coronary**  
Hemodynamic effects of nitroprusside infusion during coronary artery operation in man, III-4  
Long-term follow-up of patients with coronary artery bypass grafts, III-32  
Myocardial revascularization and mitral repair or replacement for mitral insufficiency due to coronary artery disease, III-94  
Patency of internal mammary-coronary grafts, III-70  
The VA Cooperative Randomized Study of Surgery for Coronary Arterial Occlusive Disease: II. Subgroup with significant left main lesions, III-107
- Arteries, mammary**  
Comparison of internal mammary artery and saphenous vein bypass grafts for myocardial revascularization: exercise test and angiographic correlations, III-1  
Patency of internal mammary-coronary grafts, III-70
- Arteries, pulmonary**  
Pulmonary artery banding for truncus arteriosus in the first year of life, III-17  
Relationship between right ventricular muscle bundles and pulmonary valve: significance in pulmonary atresia with intact ventricular septum, III-79  
Use of a valved conduit from right atrium to pulmonary artery for "correction" of single ventricle, III-63
- Atresia, pulmonary**  
Pulmonary atresia: surgical considerations and results in 103 patients undergoing definitive repair, III-35  
Relationship between right ventricular muscle bundles and pulmonary valve: significance in pulmonary atresia with intact ventricular septum, III-79
- Atresia, tricuspid**  
Hemodynamic evaluation of Fontan operation in tricuspid atresia, III-99
- B**
- Balloon pumping**  
Balloon counterpulsation following surgery for ischemic heart disease, III-90
- C**
- Refractory angina pectoris: follow-up after intraaortic balloon pumping and surgery, III-41
- Bypass surgery**  
Comparison of internal mammary artery and saphenous vein bypass grafts for myocardial revascularization: exercise test and angiographic correlations, III-1  
Continuous detection of microemboli during cardiopulmonary bypass in animals and man, III-74  
Determination of improved myocardial perfusion after aortocoronary bypass surgery by exercise rubidium-81 scintigraphy, III-20  
Long-term follow-up of patients with coronary artery bypass grafts, III-32  
Patency of internal mammary-coronary grafts, III-70
- D**
- Cardiac output**  
Postcardiotomy low cardiac output clinical experience with a left heart assist device, III-102
- Cardiac transplantation**  
Does cardiac transplantation prolong life and improve its quality? An updated report, III-56
- Cardiotomy**  
Postcardiotomy low cardiac output clinical experience with a left heart assist device, III-102
- Congenital disorders**  
Pulmonary artery banding for truncus arteriosus in the first year of life, III-17  
Use of a valved conduit from right atrium to pulmonary artery for "correction" of single ventricle, III-63
- Coronary artery disease**  
Myocardial revascularization and mitral repair or replacement for mitral insufficiency due to coronary artery disease, III-94
- Cross clamping, aortic**  
Improved myocardial performance after aortic cross clamping by combining pharmacologic arrest with total hypothermia, III-11
- E**
- Embolisms**  
Continuous detection of microemboli during cardiopulmonary bypass in animals and man, III-74
- Exercise tests**  
Comparison of internal mammary artery and saphenous vein bypass grafts for myocardial revascularization: exercise test and angiographic correlations, III-1  
Determination of improved myocardial perfusion after aortocoronary bypass surgery by exercise rubidium-81 scintigraphy, III-20
- E**

## F

**Fontan operation**

Hemodynamic evaluation of Fontan operation in tricuspid atresia, III-99

## G

**Grafts**

Actuarial comparison of Hancock porcine and prosthetic disc valves for isolated mitral valve replacement, III-60  
Comparison of internal mammary artery and saphenous vein bypass grafts for myocardial revascularization: exercise test and angiographic correlations, III-1  
Current status of porcine heterograft prostheses: a 5-year appraisal, III-27  
Homograft and prosthetic aortic valve replacement: a comparative study, III-84  
Long-term follow-up of patients with coronary artery bypass grafts, III-32  
Patency of internal mammary-coronary grafts, III-70

## H

**Heart transplantation**

Does cardiac transplantation prolong life and improve its quality? An updated report, III-56

**Heterografts**

Actuarial comparison of Hancock porcine and prosthetic disc valves for isolated mitral valve replacement, III-60  
Current status of porcine heterograft prostheses: a 5-year appraisal, III-27

**Homografts**

Homograft and prosthetic aortic valve replacement: a comparative study, III-84

**Hypertension**

Pulmonary atresia: surgical considerations and results in 103 patients undergoing definitive repair, III-35

**Hypothermia**

Improved myocardial performance after aortic cross clamping by combining pharmacologic arrest with total hypothermia, III-11

## I

**Ischemic heart disease**

Balloon counterpulsation following surgery for ischemic heart disease, III-90

## L

**Lesions**

The VA Cooperative Randomized Study of Surgery for Coronary Arterial Occlusive Disease: II. Subgroup with significant left main lesions, III-107

## M

**Microembolisms**

Continuous detection of microemboli during cardiopulmonary bypass in animals and man, III-74

**Mitral valve**

Actuarial comparison of Hancock porcine and prosthetic disc valves for isolated mitral valve replacement, III-60  
Mitral valve replacement: a 10-year follow-up of non-cloth-covered vs. cloth-covered caged-ball prostheses, III-47  
Myocardial revascularization and mitral repair or replacement for mitral insufficiency due to coronary artery disease, III-94

**Monitoring procedures**

Continuous detection of microemboli during cardiopulmonary bypass in animals and man, III-74

**Myocardial infarction**

Perioperative myocardial infarction diagnosed by technetium 99m stannous pyrophosphate myocardial scintigrams, III-24

**Myocardial performance**

Determination of improved myocardial perfusion after aor-

tocoronary bypass surgery by exercise rubidium-81 scintigraphy, III-20

Improved myocardial performance after aortic cross clamping by combining pharmacologic arrest with total hypothermia, III-11

## N

**Nitroprusside**

Hemodynamic effects of nitroprusside infusion during coronary artery operation in man, III-4

## O

**Occlusive disease**

The VA Cooperative Randomized Study of Surgery for Coronary Arterial Occlusive Disease: II. Subgroup with significant left main lesions, III-107

## P

**Pacing and pacemakers**

Postcardiotomy low cardiac output clinical experience with a left heart assist device, III-102

**Pediatrics**

Pulmonary artery banding for truncus arteriosus in the first year of life, III-17

**Porcine heterografts**

Actuarial comparison of Hancock porcine and prosthetic disc valves for isolated mitral valve replacement, III-60  
Current status of porcine heterograft prostheses: a 5-year appraisal, III-27

**Prosthetic devices**

Actuarial comparison of Hancock porcine and prosthetic disc valves for isolated mitral valve replacement, III-60  
Current status of porcine heterograft prostheses: a 5-year appraisal, III-27  
Homograft and prosthetic aortic valve replacement: a comparative study, III-84  
Mitral valve replacement: a 10-year follow-up of non-cloth-covered vs. cloth-covered caged-ball prostheses, III-47  
Use of a valved conduit from right atrium to pulmonary artery for "correction" of single ventricle, III-63

**Pulmonary atresia**

Pulmonary atresia: surgical considerations and results in 103 patients undergoing definitive repair, III-35  
Relationship between right ventricular muscle bundles and pulmonary valve: significance in pulmonary atresia with intact ventricular septum, III-79

**Pulmonary valve**

Relationship between right ventricular muscle bundles and pulmonary valve: significance in pulmonary atresia with intact ventricular septum, III-79

## R

**Regurgitation**

Operative management of tricuspid regurgitation, III-96

**Right ventricle**

Pulmonary atresia: surgical considerations and results in 103 patients undergoing definitive repair, III-35  
Relationship between right ventricular muscle bundles and pulmonary valve: significance in pulmonary atresia with intact ventricular septum, III-79

## S

**Scintigraphy**

Determination of improved myocardial perfusion after aortocoronary bypass surgery by exercise rubidium-81 scintigraphy, III-20

Perioperative myocardial infarction diagnosed by technetium 99m stannous pyrophosphate myocardial scintigrams, III-24

**Single ventricle**

Use of a valved conduit from right atrium to pulmonary artery for "correction" of single ventricle, III-63

**Stenosis**

Use of a valved conduit from right atrium to pulmonary artery for "correction" of single ventricle, III-63

**Survival studies**

Does cardiac transplantation prolong life and improve its quality? An updated report, III-56

Long-term follow-up of patients with coronary artery bypass grafts, III-32

Mitral valve replacement: a 10-year follow-up of non-cloth-covered vs. cloth-covered caged-ball prostheses, III-47

Pulmonary atresia: surgical considerations and results in 103 patients undergoing definitive repair, III-35

**T****Technetium**

Perioperative myocardial infarction diagnosed by technetium 99m stannous pyrophosphate myocardial scintigrams, III-24

**Transplantation**

Does cardiac transplantation prolong life and improve its quality? An updated report, III-56

**Tricuspid valve**

Hemodynamic evaluation of Fontan operation in tricuspid atresia, III-99

Operative management of tricuspid regurgitation, III-96

**Truncus arteriosus**

Pulmonary artery banding for truncus arteriosus in the first year of life, III-17

**V****Valve replacement**

Actuarial comparison of Hancock porcine and prosthetic disc valves for isolated mitral valve replacement, III-60

Homograft and prosthetic aortic valve replacement: a comparative study, III-84

Mitral valve replacement: a 10-year follow-up of non-cloth-covered vs. cloth-covered caged-ball prostheses, III-47

Myocardial revascularization and mitral repair or replacement for mitral insufficiency due to coronary artery disease, III-94

**Valves**

Relationship between right ventricular muscle bundles and pulmonary valve: significance in pulmonary atresia with intact ventricular septum, III-79

**Vasodilator agents**

Hemodynamic effects of nitroprusside infusion during coronary artery operation in man, III-4

**Veins, saphenous**

Comparison of internal mammary artery and saphenous vein bypass grafts for myocardial revascularization: exercise test and angiographic correlations, III-1

**Ventricular septum**

Relationship between right ventricular muscle bundles and pulmonary valve: significance in pulmonary atresia with intact ventricular septum, III-79